

**Remarks/Arguments:**

**I. Status**

The Office Action dated December 30, 2003 has been carefully reviewed. By way of amendment, claims 2 and 19 have been cancelled and claims 27-32 have been added. Accordingly, Claims 1, 3-18 and 20-32 are pending in this application. Reconsideration of this application, as amended, is respectfully requested.

**II. Title of the Invention.**

In the Office Action dated October 30, 2003, the title was rejected as being not descriptive and a new title was suggested. The Applicant has amended the title to read “METHOD AND APPARATUS FOR LANE AND FRONT-END PLANNING AND DESIGN ANALYSIS”.

The Applicant thanks the Examiner for the suggested title, however, the title as amended more accurately describes the nature of the present invention.

**II. Specification and Claims.**

The applicant has corrected a number of typographical errors in the originally submitted application. Additionally, unclear portions of the specification have been deleted or rewritten to be clearer.

**III. 35 U.S.C. § 112 Rejection.**

Claims 1-26 were rejected in the Office Action of December 30, 2003 for being indefinite. Specifically, it was stated that the claims failed to detail various limitations and failed to disclose various necessary steps in the method. Claims 2 and 19 have been canceled. The remaining claims include limitations that are legally sufficient and definite.

**Discussion Re: Patentability of Claim 1 (as amended)**

Claim 1 recites:

A method of quantitatively evaluating alternatives to check-out operations using simulation model, comprising:

selecting from a data input dictionary parameters describing a first check-out operations;

inputting parameter values for the selected parameters describing the first check-out operations into the simulation model;

transforming the first check-out operation parameters into check-out performance results; and

outputting the results from the simulation model.

As noted by Judge Newman,

[The] proposition that the patentee must include in every claim ‘each and every element’ that was described as ‘part of his invention,’ whether or not the element is necessary for patentability of the claim”... “is not a correct statement of the law”... When the claim is supported by the patentee’s disclosure, ... neither law nor policy requires that the claim contain all the elements described in the specification as part of the new machine or method.

*Reiffin v. Microsoft Corp.*, 214 F.3d 1342, 1346 (Fed. Cir. 2000) (*dissenting*).

The Office Action does not allege that the invention of claim 1 is not disclosed in the specification and there is no requirement that each and every limitation or step in a

method be claimed. Accordingly, there is no basis for the rejection of claim 1 under 35 U.S.C. § 112. Therefore, the Applicant respectfully submits that the rejection of claim 1 under 35 U.S.C. § 112 should be withdrawn.

Claims 3-18 and 20-26

Claims 3-18 and 20-26 depend directly or indirectly from 1. As a result, each of claims 3-18 and 20-26 include sufficient limitations to be allowed under 35 U.S.C. § 112 for the reasons set forth above with respect to claim 1.

The Office Action further stated that a number of terms and/or claim elements were vague or indefinite. Claims 1, 3-7, 9-10, 20, and 22-26 have been amended to provide more clarity. Moreover, all of the claim language carries the ordinary meaning of the words in their normal usage in the field of invention, and/or the meaning is apparent from the descriptive portion of the specification. For example, clarity of the terms cited by the Office Action is provided as follows:

“fast-track customer” in claim 3 is discussed at least at page 16, lines 14-15;  
“running step” in claim 5 has been amended to be a “transforming step” that finds antecedent basis in claim 1;

“unlimited arrival mode and a limited arrival mode” in claim 5 has been amended to make the element grammatically correct so as to clarify the element. Specifically, the “and” has been replaced with “or”. Additionally, “unlimited arrival mode” and “limited arrival mode” are discussed at least at page 13, line 24 through page 14 line 5;

“intervention” in claim 6 is discussed at least at page 14, lines 23-24 and page 18, lines 16-19;

“super-helpers” in claims 8, 14 and 24 is discussed at least at page 38, line 26

through page 39, line 8;

“a model parameters category” in claim 9 is discussed at least at page 23 through page 25, line 19;

“belt size” in claim 11 is discussed at least at page 23, lines 3-14, and Appendix A, page 1;

“and which resources are available for bagging” in claim 17 is discussed at least at page 25, lines 1-3;

“replications, a stream number identifier” in claim 18 is discussed at least at page 25, lines 7-19 and page 36, lines 5-14;

“range and value” in claim 20 is discussed at least at page 21, line 23 through page 22, line 5, and the claim has been amended to provide antecedent basis;

“running step and step outputting step” in claim 22 has been deleted and the claim amended to provide additional limitations;

“each type of resource” in claim 23 finds proper antecedent basis in the amended claim;

“all measures” and “regular lanes” in claim 24 are discussed at least at page 35, line 15 through page 36, line 26;

“all measures” and “lane” in claim 25 are discussed at least at page 35 line 15 through page 36 line 26; and

“performance measurement” in claim 26 has been amended to correctly identify “performance measure” as the proper antecedent basis.

Accordingly, all terms identified by the Office action as being vague or indefinite, have either been amended to provide more clarity and/or have a meaning that is apparent from the descriptive portion of the specification. Therefore, the Applicant respectfully submits that the rejection of claims 3-18 and 20-26 under 35 U.S.C. § 112 should be withdrawn.

#### **IV. Appendix A.**

The Office Action required cancellation of Appendix A from the specification and submission of the Appendix as a compact disc claiming Appendix A is a computer listing.

Appendix A is a table of less than 50 pages. Pursuant to 37 CFR 1.52, submission of a table of less than fifty pages in paper form is proper. Accordingly, the rejection has been overcome.

#### **V. 35 U.S.C. § 101 Rejection.**

The Office Action rejected claims 1-26 stating that they merely claimed “a mathematical algorithm.” Office Action dated December 30, 2003 at page 4. Claims 2 and 19 have been cancelled, and claim 1 has been amended to more clearly claim one embodiment of the present invention.

#### Discussion Re: Patentability of Claim 1 (as amended)

Claim 1 recites:

A method of quantitatively evaluating alternatives to check-out operations using simulation model, comprising:

- selecting from a data input dictionary parameters describing a first check-out operations;
- inputting parameter values for the selected parameters describing the first check-out operations into the simulation model;
- transforming the first check-out operation parameters into check-out performance results; and
- outputting the results from the simulation model.

According to Claim 1, physical objects or activities (check-out operations) are transformed outside of the computer into computer data (parameters describing check-out operations), where the parameters, once input, comprise signals corresponding to physical objects or activities external to the computer system, and where the simulation model causes a physical transformation of the signals which are intangible representations of the physical objects or activities.

Therefore, claim 1, as amended, is not merely directed to a mathematical algorithm, and claims proper statutory subject matter. Accordingly, the Applicant respectfully submits that the rejection of claim 1 under 35 U.S.C. § 101 has been overcome.

Claims 3-18 and 20-26

Claims 3-18 and 20-26 depend directly or indirectly from 1. As a result, each of claims 3-18 and 20-26 is allowable for the reasons set forth above with respect to claim 1. Accordingly, the Applicant respectfully submits that the rejection of claims 3-18 and 20-26 under 35 U.S.C. § 101 has been overcome.

## VI. Claim Interpretation.

The Office Action of December 30, 2003 offered definitions for the terms “super-helpers” and “data input dictionary”. Respectfully, the definitions are over-limited.

The term “super-helpers” is described at least at page 38, line 26 through page 39, line 8. The definition proposed by the Office Action is overly narrow. The term should be interpreted in accordance with the specification.

The term “data input dictionary” (DID) is discussed at least at page 21, line 16 through page 25 line 19. As discussed therein, the DID comprises specific *information*. Specifically, the DID defines the model’s input parameters and their properties. The information may be maintained in a database, but the information is not limited to being maintained in a database.

## VII. 35 U.S.C. § 102 Rejection.

Claims 1-26 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,557,513 to Frey et al. Claims 2 and 19 have been canceled. Reconsideration of the remaining claims in view of the above amendments and following remarks is respectfully requested.

### The Present Invention

The present invention comprises a model for simulating performance of retail check stands or store front ends. Once parameters have been input, the model characterizes the check stands or store front ends and transforms the input to provide

output in the form of performance measures. The purpose of the invention is to provide retailers with information regarding the incorporation of new technologies or design changes in check stands or store front ends, before capital expenditure is made on the new technology or design.

By way of example, but not of limitation, the present invention allows a user to input user specific customer characteristics, including number of shoppers, time of day the shoppers arrive, etc., along with user specific staffing strategies. The present invention may then be used to predict the performance of a variety of alternative check stands or store front ends. The present invention then outputs performance measures so that the user can make an informed business decision regarding the alternative technology or design of the check stands or store front ends.

Accordingly, the present invention is a system that is used to evaluate check stands that may not actually be installed, so as to provide a user with information regarding the benefits of purchasing such check stands. The present invention does not rely on real-time customer data. In fact, all customer data may be hypothetical. This is a particularly useful feature when a new store is being designed, since there will not be any actual customer data for that store.

#### Frey et al.

Frey et al. discloses a short-term shopper traffic forecaster that incorporates real-time data. (Frey et al. at Abstract.) The system of Frey et al. obtains information regarding the number of shoppers actually entering a store. (Id. at column 2, lines 11-16.) The system then performs a statistical analysis to generate short-term forecasts of

how many shoppers will arrive at checkout lanes, and at what time they will arrive. (Id. at column 2, lines 2-5.) Based upon this analysis, the system predicts staffing requirements for the store's checkout lanes. (Id. at column 7, lines 40-42.) The system may be used to forecast short-term staffing requirements in an environment that includes both express and non-express checkout lanes. (Id. at column 10, lines 36-37.)

Frey thus discloses a scheduling system used to determine how existing resources should be staffed, in real-time, in response to the actual numbers of shoppers in a store.

Discussion Re: Patentability of Claim 1 (as amended)

Claim 1 recites:

A method of quantitatively evaluating alternatives to check-out operations using simulation model, comprising:

selecting from a data input dictionary parameters describing a first check-out operations;

inputting parameter values for the selected parameters describing the first check-out operations into the simulation model;

transforming the first check-out operation parameters into check-out performance results; and

outputting the results from the simulation model.

While Frey et al. discloses a system that can be used to forecast shopper traffic, in the short-term, Frey et al. does not disclose various elements of claim 1 as amended.

Frey et al. does not disclose selecting parameters describing check-out operations from a data input dictionary, or inputting those parameters into a model. Moreover, Frey et al. is not directed toward evaluating alternatives to check-out operations. Anticipation under 35 U.S.C. § 102 is proper only if the prior art reference discloses each and every element

of the claim. Since Frey et al. does not disclose each and every element of Applicant's claim 1, Frey et al. does not anticipate claim 1.

Moreover, if the rejection of claim 1 is maintained after consideration of the amendments and remarks presented herein, the Examiner is respectfully requested to indicate where each limitation is disclosed by Frey et al. The Office Action merely quoted extensive portions of Frey et al., and did not relate those quotations to any elements found in claim 1, or any other claim. Clarification is respectfully requested.

Claims 3-18 and 20-26

Claims 3-18 and 20-26 depend directly or indirectly from 1. As a result, each of claims 3-18 and 20-26 is allowable for the reasons set forth above with respect to claim 1. Moreover, each of these depended claims include additional novel and non-obvious limitations. Accordingly, the Applicant respectfully submits that each of claims 3-18 and 20-26 are further allowable over the cited art.

**VIII. Claims 27-32.**

Claims 27-32 have been added. These claims recite novel and non-obvious limitations. Accordingly, claims 27-32 are believed to be allowable over the prior art.

**IX. Conclusion**

Applicant respectfully requests entry of the amendments and favorable consideration of the application.

A prompt and favorable action on the merits is requested.

Respectfully Submitted,



James D. Wood  
Attorney for Applicants  
Attorney Registration No. 43,285

March 30, 2004

Maginot, Moore & Beck  
Bank One Center Tower  
111 Monument Circle, Suite 3000  
Indianapolis, IN 46204-5115  
Telephone: (317) 638-2922